

Salticidae of the Middle Asia (Aranei). I. New species from the genera *Heliophanus*, *Salticus* and *Sitticus*, with notes on new faunistic records of the family.

Пауки-скакунчики (Aranei, Salticidae) Средней Азии. I. Новые виды из родов *Heliophanus*, *Salticus* и *Sitticus*, с заметками о новых фаунистических находках семейства.

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KEY WORDS: Salticidae, Middle Asia, *Heliophanus*, *Salticus*, *Sitticus*.

КЛЮЧЕВЫЕ СЛОВА: Salticidae, Средняя Азия, *Heliophanus*, *Salticus*, *Sitticus*.

ABSTRACT: Eight new species of Salticidae from the Middle Asia are described: *Heliophanus koktas* sp.n., which belongs to the *decoratus* species group (the easternmost representative of the group); *Salticus dzhungaricus* sp.n. and *S.proszynskii* sp.n., both are closely related to *S.latidentatus* Roewer from C.Asia; *Sitticus inopinabilis* sp.n. and *S.pulchellus* sp.n. from the *saxicola* species group; *S.monstrabilis* sp.n. from the *floricola* species group; *S.karakumensis* sp.n. and *S.kazakhstanicus* sp.n., which form a compact species group within the genus *Sitticus* owing to unique general appearance, which is similar to those of desert species of the genera *Yllenus* and *Aelurillus*. Some new faunistic records for *Bianor stepposus* Log., *Euophrys nigrata* (Thor.), *Heliophanus curvidens* (O.Pick.-Cambr.), *H.potanini* Sch., and *Marpissa nivoyi* (Luc.) are also proposed.

РЕЗЮМЕ: Из Средней Азии описано восемь новых видов пауков-скакунчиков: *Heliophanus koktas* sp.n., принадлежащий к группе видов *decoratus*, и представляющий ее крайнюю восточную находку; *Salticus dzhungaricus* sp.n. и *S.proszynskii* sp.n., близкородственные *S.latidentatus* Roewer из Центральной Азии; *Sitticus inopinabilis* sp.n. и *S.pulchellus* sp.n. из группы *saxicola*; *S.monstrabilis* sp.n. из груп-

пы *floricola*; а также *S.karakumensis* sp.n. и *S.kazakhstanicus* sp.n., формирующие компактную группу внутри рода *Sitticus* благодаря своему необычному для рода сходству по внешнему виду с пустынными видами родов *Yllenus* и *Aelurillus*. Приведены также новые фаунистические данные для *Bianor stepposus* Log., *Euophrys nigrata* (Thor.), *Heliophanus curvidens* (O.Pick.-Cambr.), *H.potanini* Sch. и *Marpissa nivoyi* (Luc.).

Introduction

The salticid fauna of the Middle Asia that were earlier reviewed by A.B.Nenilin [1984a, 1985] is comprised of 98 species and 26 genera. Recently, two new species of *Sitticus* have been described from Kazakhstan and Kyrgyzstan [Logunov & Wesolowska, in press]. So at least 100 species of jumping spiders were known up-to-date in the Middle Asia.

The present paper deals with the descriptions of eight new Salticidae which are found in the Middle Asia. Besides, new faunistic records have been incorporated for additional five rare species of Salticidae found in this region. The material studied here is based on extensive collections made in the Middle Asia by many per-

sons within last years, mainly Drs. A.A.Zyuzin and Ch.K. Tarabaev (Alma-Ata) during their expeditions to S.-Kazakhstanian deserts. Other sources for specimens examined are indicated by the following: Zoological Museum of the Moscow State University (ZMMU), Zoological Museum of the Biological Institute, Novosibirsk (BI) and Zoological Institute in St.-Petersburg (ZIP). Besides that, to provide a good taxonomic diagnosis, a small collection of C.-Asiatic Salticidae from the Institute of Zoology PAN, Warszawa, Poland (IZW) was also studied. The following abbreviations are accepted in the text: d.- dorsally; pr.- prolaterally; rt.- retrolaterally; v.- ventrally; PLE- posterior lateral eye; AME- anterior medial eye. The system adopted for the leg spination is that used by H.Ono [1988]. The sequence of leg segments in measurement data is following: femur + patella + tibia + metatarsus + tarsus. All measurements are in mm.

Familia Salticidae.

Genus *Heliophanus* C.L.Koch, 1833.

Thirteen species of *Heliophanus* are now known from the Middle Asia [Nenilin, 1984a, 1985], of which one, *H.niveiventis* Simon, 1889, should be regarded as "nomen dubium" [Wesolowska, 1986]. However, it is necessary to add to the number by *H.mordax* (O.Pick.-Cambr., 1872), that was recently found in Turkmenia (Wesolowska, pers. comm.). For the moment, at least 5 new species are collected there. One of this species is being described herein.

Heliophanus koktas Logunov, sp.n.

Fig.1.

MATERIAL. Holotype: 1♂ (BI-116), Kazakhstan, Pavlodar Area, Maisky Distr., environs of Koktas Lake, dry steppe, 8.05.1990, O.V.Lyakhov. Paratypes: 1♀ (BI-117), together with holotype; 4♂, 1♀ (ZMMU, Ta-4688), 6♂ (ZIP), Uralsk Area, Dzhanibek, 29.05.1982 K.G.Mikhailov; 1♀ (BI-1171), same locality, summer 1974 coll.?

DIAGNOSIS. It is rather difficult to include a new species into any known species group owing to the genital characters only. Apparently, *H.koktas* sp.n. should be included in the

decoratus group (sensu Wesolowska, 1986) since it is very similar to Wesolowska's description of this group. However, the new species may be easily distinguished from other middle-asiatic congeners by the strong back-curved apophysis of the palp femur (Fig.1e) and the hook-like embolus in male (Fig.1b-d), as well as by the structure of epigyne and vulva (Fig.1g-j).

DESCRIPTION. MALE. Carapace 1.53 long, 1.07 wide, 0.63 high at PLE. Ocular area 0.70 long, 0.81 wide anteriorly and 0.91 wide posteriorly. AME diameter 0.26. Abdomen 1.51 long, 1.07 wide. Cheliceral length 0.47. Length of leg segments: Leg I: 0.71 + 0.41 + 0.44 + 0.34 + 0.31; leg II: 0.60 + 0.36 + 0.34 + 0.33 + 0.26; leg III: 0.57 + 0.36 + 0.30 + 0.41 + 0.26; leg IV: 0.77 + 0.33 + 0.44 + 0.50 + 0.30. Leg spination: Leg I: femur d.0-1-2ap; tibia v.1-1, pr.0-1; metatarsus v.2-2. Leg II: femur d.0-1-1-2ap; tibia pr.0-1, v.1-0; metatarsus v.2-2. Leg III: femur d.0-1-1-1ap; tibia pr.0-1; metatarsus pr.2ap, d. and v.1ap. Leg IV: femur d.1-1-1; tibia pr.0-1, v.1-2ap; metatarsus 5ap. Colouration: Carapace dark-brown with orange clypeus, covered by adpressed white hairs. There is a row of trichobotria on both sides of carapace below the PME and PLE. Such character is usually considered as an unique diagnostic one of *Icius-Pseudicius* complex. Sternum greyish with lighter margins. Maxillae, labium and chelicerae light-orange. Maxillae exhibit a rather unusual form (Fig.1f). Abdomen grey with wide median yellow band and similar one encircled dorsum (Fig.1k). Venter grey with two yellow parallel lines. Legs yellow. All segments except of tarsi with black stripes on prolateral-ventral sides and with black lines on dorsal sides. Palp with hook-like embolus (Fig.1b-d). Apophysis of palpal femur is strongly back-curved (Fig.1e). Palp structure shown in fig.1a-e.

FEMALE. Carapace 1.66 long, 1.20 wide, 0.64 high at PLE. Ocular area 0.79 long, 0.96 wide anteriorly and 1.09 wide posteriorly. Abdomen 1.97 long, 1.36 wide. Cheliceral length 0.51. Length of leg segments: Leg I: 0.79 + 0.50 + 0.49 + 0.34 + 0.31; leg II: 0.70 + 0.41 + 0.40 + 0.33 + 0.27; leg III: 0.71 + 0.36 + 0.36 + 0.44 + 0.30; leg IV: 0.90 + 0.44 + 0.61 + 0.61 + 0.40. Leg spination: Leg I: femur d.1-1-2ap; tibia pr.0-1, v.2-2; metatarsus v.2-2ap. Leg II: femur 1-1-2ap; tibia pr.0-1, v.1-1; metatarsus v.2-2ap.

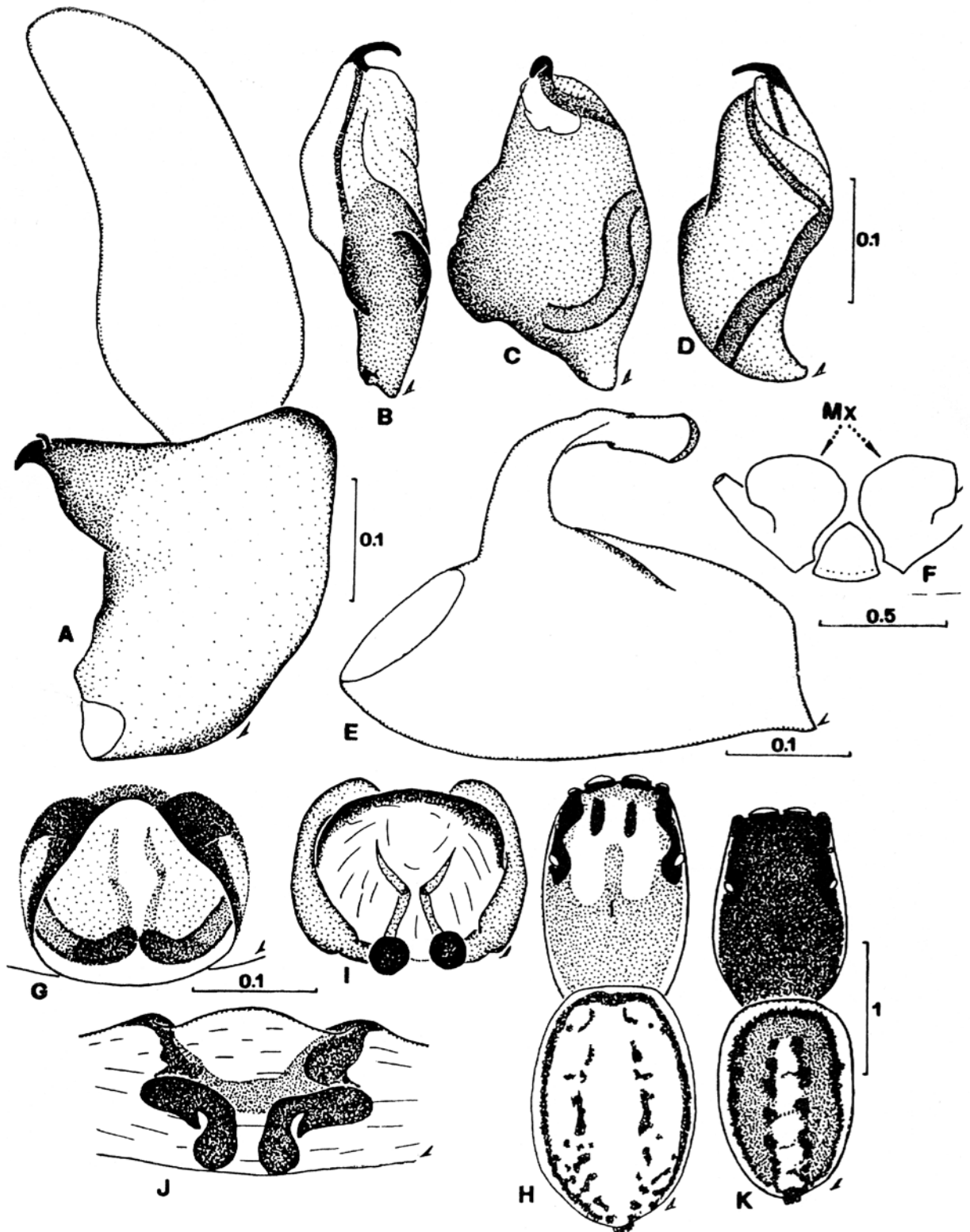


Fig.1. *Heliophanus koktas* sp.n.: a - male palp tibia with cymbium; b - tegulum with "hook"-like embolus, prolateral view; c - ditto, ventral view; d - ditto, retrolateral view; e - male palpal femur with apophysis; f - male maxillae (Mx); g - epigyne; i - vulva, ventral view; j - ditto, view from behind; h - female, general appearance, k - male, ditto. Scale in mm.

Рис.1. *Heliophanus koktas* sp.n.: а - голень пальпы самца с шимбиумом; б - тегурум с крючковидным эмболиосом, пролатеральный вид; в - то же, вентрально; г - то же, ретролатерально; е - бедро пальпы самца с выростом; ф - максиллы самца; г - эпигина; и - вульва, вентрально; j - то же, вид сзади; h - самка, общий вид; k - самец, общий вид. Шкала в мм.

Leg III: femur d.1-1-2ap; tibia pr.0-1; metatarsus 5ap. Leg IV: femur d.1-1-1; tibia pr.0-1, v.1-1; metatarsus v.1-1+4ap. Colouration lighter than those of male. Carapace light-brown, black around eyes (Fig.1h). Clypeus orange. Remaining parts of body yellow. Abdomen dorsally with pair of grey longitudinal lines composed of spots, which surrounded by the same one (Fig.1h). Epigyne exhibits triangular depression with chitinous rounded anterior edge (Fig.1g). Vulval structure shown in Fig.1i,j.

DISTRIBUTION. Pavlodar and Uralsk areas of Kazakhstan. This is the easternmost record of a representative of the "*decoratus*" species group known earlier from North Africa and Spain only [Wesolowska, 1986, Fig. 933].

ETYMOLOGY. The species was named after Koktas Lake, where the holotype has been collected.

Genus *Salticus* Latreille, 1804.

Up to date *Salticus* was represented in the Middle Asia by the single species, *S.tricinctus* (C.L.Koch, 1846) [Nenilin, 1984b, 1985]. While examining materials from the Middle Asia, two new species have been proposed, namely *S.dzhungaricus* sp.n. and *S.proszynskii* sp.n. These three species together with *S.latidentatus* Roewer, 1951 (from the Central Asia) (Fig.2a-e) and *S.marenzelleri* Nosek, 1905 (from Turkey) show close affinities in the structure of genitalia indicating apparently a monophyletic grouping at the subgeneric level. Below new species are being described, all species except of *S.marenzelleri* Nosek are pictured and their distributions (Fig.5) are shown.

Salticus dzhungaricus Logunov, sp.n. (Fig.2g,i)

MATERIAL. Holotype: 1♀ (BI-1156), Kazakhstan, Taldy-Kurgan Area, Karatalinsky Distr., 21 km from the highway Ushtobe-Akzhhar, 26.07.1988, A.A.Zyuzin.

DIAGNOSIS. The new species is closely related to *S.latidentatus* Roewer and *S.proszynskii* sp.n., but may be easily distinguished by the structure of genitalia, namely as follows: the openings directed anteriorly (Fig.2g) and the evenly coloured dark-grey abdomen.

DESCRIPTION. FEMALE. Carapace 1.80 long, 1.15 wide, 0.58 high at PLE. Ocular area

0.83 long, 0.93 wide anteriorly and 1.00 wide posteriorly. AME diameter 0.30. Abdomen 2.53 long, 1.45 wide. Cheliceral length 0.65. Clypeus almost not pronounced. Length of leg segments: Leg I: 0.79 + 0.45 + 0.50 + 0.43 + 0.35; leg II: 0.68 + 0.40 + 0.50 + 0.38 + 0.28; leg III: 0.78 + 0.35 + 0.45 + 0.45 + 0.38; leg IV: 0.95 + 0.40 + 0.65 + 0.55 + 0.45. Leg spination: legs I and II are without spines except of thickened hairs on dorsal parts of femora- 0-1-1-2; leg III: femur d.1-1-1, metatarsus pr. and rt.1ap, v.2ap; leg IV: femur d.1-1-1, tibia v.1ap, metatarsus pr. and rt.1ap, v. 2ap. Colouration: Carapace dark-brown, covered by bright scales. Eye field black. Sternum and chelicerae dark-brown. Maxillae and labium dark-brown with yellow tips. Abdomen monocolour grey-brown, covered by thin bright scales. Book-lung covers and spinnerets grey. Palpi yellow. Legs: coxae and femora brownish with yellow spots; patellae, tibiae and metatarsi yellow with brown sides; tarsi yellow. Epigyne and vulva shown in Figs.2g,i.

MALE unknown.

DISTRIBUTION. Type locality only (Fig.5).

ETYMOLOGY. This species is named after the natural region ("Dzhungaria"), in which it distributed.

Salticus proszynskii Logunov, sp.n. (Fig.3)

MATERIAL. Holotype: 1♂ (ZMMU, Ta-4685), Kyrgyzstan, environs of Bishkek (Frunze) City, 5.07.1983, S.V.Ovchinnikov. Paratypes: 1♀ (ZMMU, Ta-4686), together with holotype; 1♂, 1♀ (BI-1155), Kyrgyzstan, Chuis-kaya Valley, bank of Chu river, 7.06.1984, S.V.Ovchinnikov; 1♂ (ZMMU, Ta-4687), same locality, environs of Koi-Tash Vill., 24.06.1978, S.L.Zonshtein. For comparative material, see also the next species.

DIAGNOSIS. New species is closely related to the allopatric *S.latidentatus* Roewer (see below), but may be distinguished by both colouration and the structure of genitalia. Specimens of *S.latidentatus* have a striped abdomen (Fig.2e), while the specimens of *S.proszynskii* sp.n. have no bands on the body (Fig.3g). Females of the first species have brownish legs, and ones of the second yellow. Both sexes of the new species have carapaces covered by

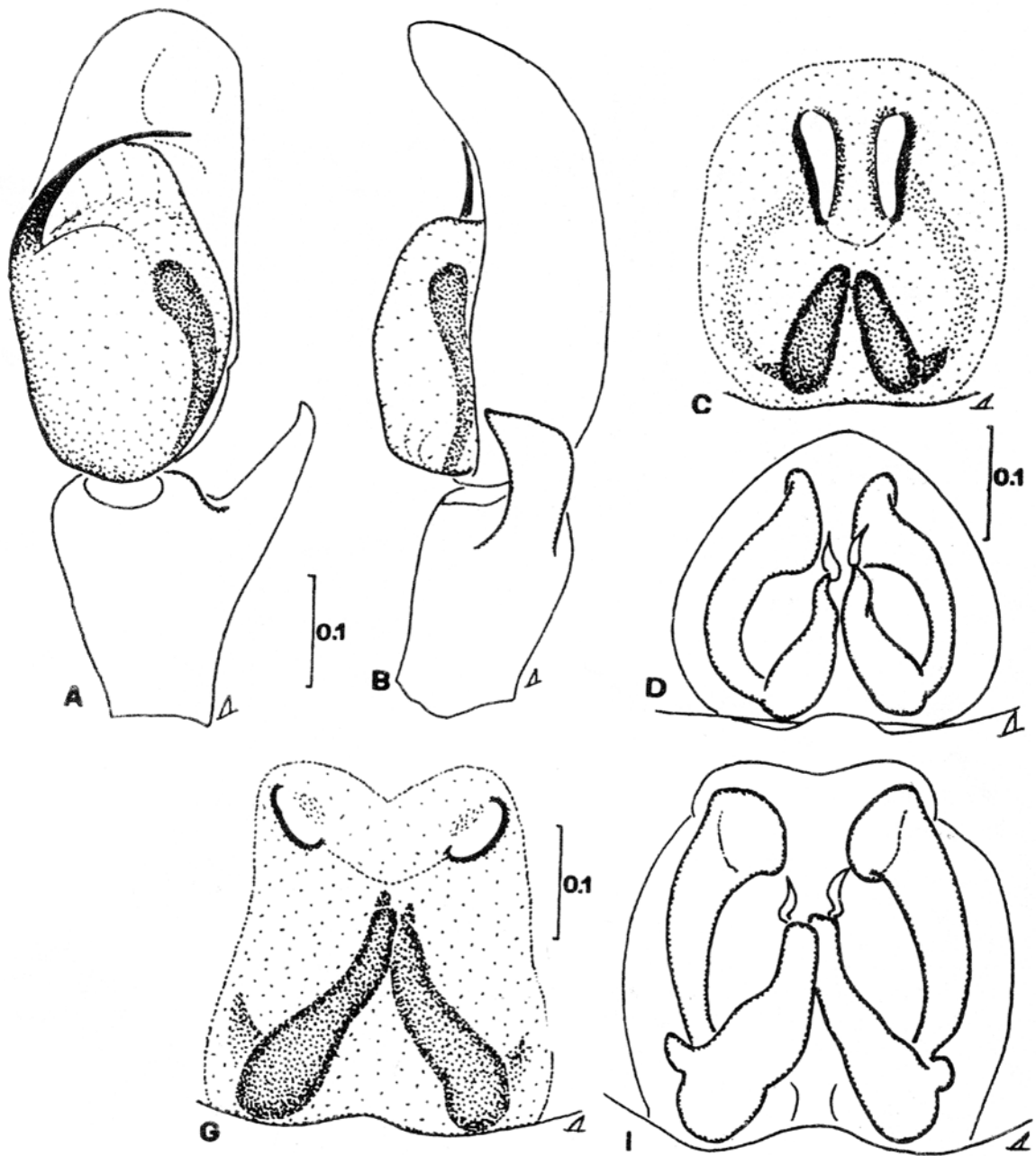


Fig. 2. *Salticus latidentatus* Roewer, 1951 (a-e) and *S. dzhungaricus* sp.n. (g-i): a - male palp, ventral view; b - ditto, lateral view; c, g - epigyne; d, i - vulva; e - female, general appearance. Scale in mm.

Рис. 2. *Salticus latidentatus* Roewer, 1951 (a-e) и *S. dzhungaricus* sp.n. (g-i): а - пальпа самца, вентрально; б - то же, латерально; с, г - эпигина; д, и - вульва; е - самка, общий вид. Шкала в мм.

thick brown scales, but the carapace of *S. latidentatus* covered by thin white scales. Main differences between genitalia of both species are shown in the Figs. 2, 3.

DESCRIPTION. MALE. Carapace 1.76 long, 1.03 wide, 0.63 high at PLE. Ocular area 0.90 long, 0.93 wide anteriorly and 0.93 wide posteriorly. AME diameter 0.33. Abdomen 1.76 long, 1.04 wide. Cheliceral length 0.83. Clypeus

almost not pronounced. Length of leg segments: Leg I: 0.93 + 0.43 + 0.74 + 0.46 + 0.37; leg II: 0.75 + 0.43 + 0.44 + 0.41 + 0.34; leg III: 0.81 + 0.40 + 0.49 + 0.56 + 0.33; leg IV: 0.97 + 0.47 + 0.67 + 0.60 + 0.44. Leg spination: legs I and II without spines except of thickened hairs on dorsal sides of femora- 0-1-1-2; legs III and IV: femur d.1-1-1; metatarsus v.0-1ap. Colouration: Carapace brown, covered by thick dark-brown

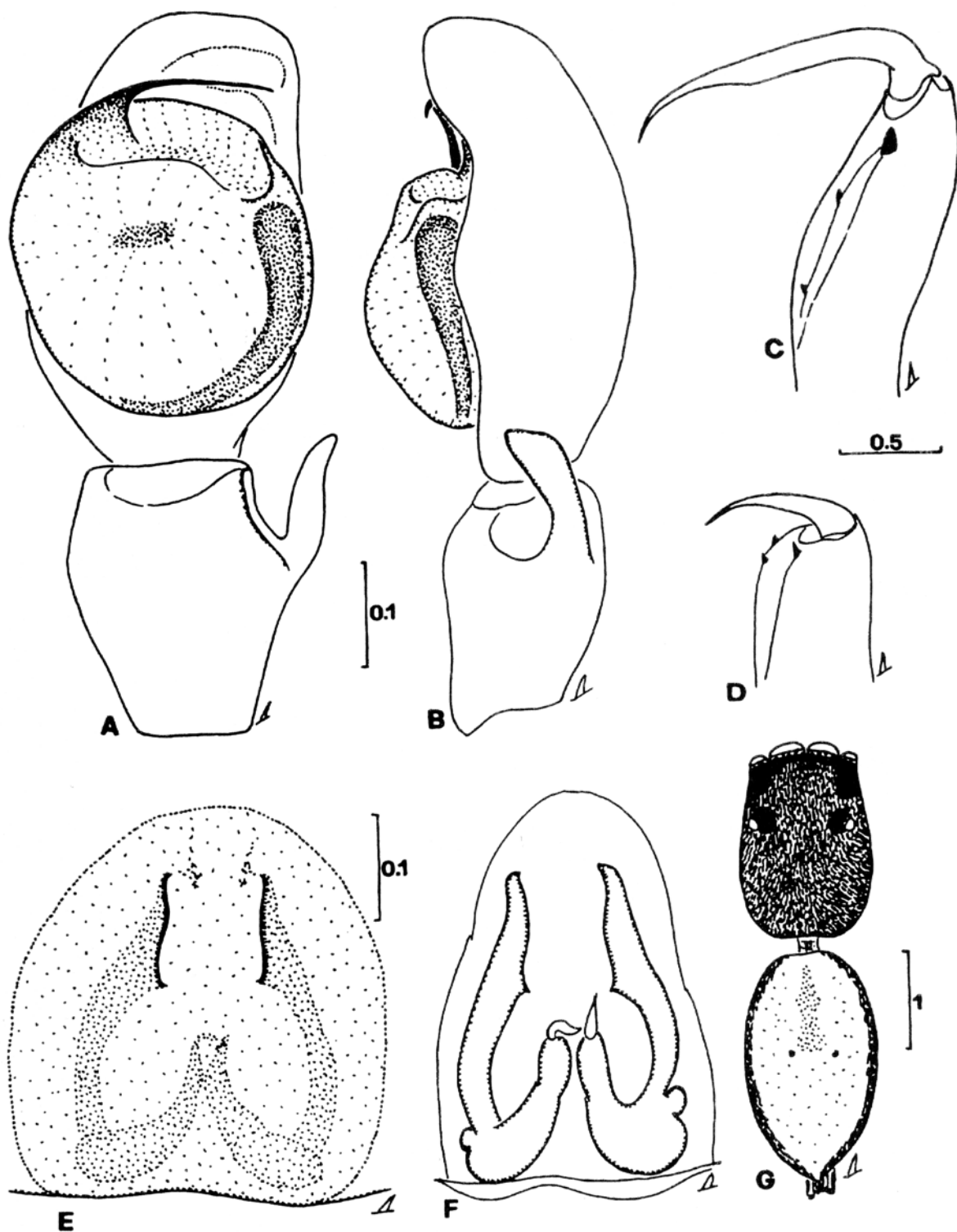


Fig.3. *Salticus prozysniskii* sp.n.: a - male palp, ventral view; b - ditto, lateral view; c - male chelicera; d - female chelicera; e - epigyne; f - vulva; g- female, general appearance. Scale in mm.

Рис.3. *Salticus prozysniskii* sp.n.: а - пальпс самца, вентрально; б - то же, латерально; с - хелицера самца; д - хелицера самки; е - эпигина; ф - вульва; г - самка, общий вид. Шкала в мм.

scales and black around eyes. Margin line of carapace bordered with white scales. Sternum, maxillae and labium yellowish-brown to orange-brown. Chelicerae brown, the shape as in Fig.3c. Abdomen dorsally yellow with brown edges of brown scales, ventrally yellow. Book-lung covers yellow. Spinnerets brownish. All legs yellow to orange, covered by long thin dark hairs. Palpal structure see Fig.3a,b.

FEMALE. Carapace 1.97 long, 1.23 wide, 0.74 high at PLE. Ocular area 1.01 long, 1.10 wide anteriorly and 1.14 wide posteriorly. AME diameter 0.37. Abdomen 2.29 long, 1.30 wide. Cheliceral length 0.59. Clypeus not pronounced. Length of leg segments: Leg I: 0.86 + 0.51 + 0.51 + 0.47 + 0.36; leg II: 0.80 + 0.44 + 0.47 + 0.44 + 0.31; leg III: 0.90 + 0.49 + 0.51 + 0.56 + 0.44; leg IV: 1.11 + 0.56 + 0.80 + 0.74 + 0.46. Leg spination as in male except as follows: metatarsus III: rt. 1ap, v.2ap; metatarsus IV: v.2ap. Colouration is similar to those of male, but carapace lighter, brownish-yellow. It also covered by thick brown scales, however, some females have eye field covered by white scales. Dorsal view of female shown in Fig.3g. Chelicerae, epigyne and vulva as in Fig.3d-f.

DISTRIBUTION. Kyrgyzstan only (Fig.5).

ETYMOLOGY. This new species was gladly named after Prof. J.Proszynski, the best specialist on salticids in the world.

Salticus latidentatus Roewer, 1951.

Fig.2a-d.

MATERIAL. 1♀ (IZW), Mongolia, 20 km SE of Zhunchar, 2.08.1963, B.Burakowski & H.Szelegewicz; 1♀ (IZW), Mongolia, Suchebator, 6.08.1963, B.Burakowski & H.Szelegewicz; 2♂, 2♀ (BI), Buryatia, Selenginsk Area, Deben Vill., 7.08.1990, S.N.Danilov.

Distribution of this species, including data of E.Schenkel [1963], W.Wesolowska [1981] (both indications as *S.potanini* Schenkel, 1963), is shown in fig.5. The structure of genitalia is given in Fig.2a-d.

Salticus tricinctus (C.L.Koch, 1846).

Fig.4.

MATERIAL. 1♂, 2♀ (BI-1174), Kazakhstan, Alma-Ata Area, Talgar Distr., Ili River, near Kapchagai reservoir, 8.05.1991, A.A.Fedorov; 1♀ (BI-1175), same locality, 9.07.1984,

A.V.Abramov; 1♀ (BI-1176), Turkmenia, Morgunovka Vill. near Kushka, 18.04.1977, M.T.Sternbergs; 1♂ (BI-1177), Tadjikistan, Vakhsh Valley, "Surkhohi" Biological Station, 26.04.1977, A.P.Kononenko; 7♂, 4♀ (ZIP), Uzbekistan, Samarkand Area, Khishrau Vill., Dargam, 1.05.1980, A.B.Nenilin.

DIAGNOSIS. Male of the species is very similar to that of *S.marenzelleri* Nosek from Turkey (see Proszynski, 1984, 127), but may be separated by the stronger embolus and the shape of tibial apophysis (Fig.4a,b). Female has a good distinguishing feature, namely the absence of bilobal epigynum plate. New species may be distinguished from other ones from the Middle and Central Asia by the position of narrow gonopores that directed toward each other (Fig.4c,d).

DISTRIBUTION. Kazakhstan, Uzbekistan, Tadjikistan, Turkmenistan, Afghanistan, Israel (see also Nenilin, 1984b; Proszynski, 1990). According to the drawings of J.Proszynski [1984, 130] the record of *S.tricinctus* in Egypt belongs to another species. All the records of this species in the Middle Asia, including also the data of D.E.Kharitonov [1969], E.M.Andreeva [1976] and A.B.Nenilin [1984b] are shown in Fig.5.

Genus *Sitticus* Simon, 1901.

From the territory of the Middle Asia only 5 species of the genus *Sitticus* have been known [Nenilin, 1984a, 1985], namely *S.ansobicus* Andreeva, 1976, *S.avocator* (O.Pickard-Cambridge, 1885), *S.caricis* (Westring, 1861), *S.terebratus* (Clerck, 1757) and *S.zimmermanni* (Simon, 1877). Additionally, two new species, *S.nenilini* and *S.talgarensis*, have been lately described by Logunov & Wesolowska (in press). We may be sure that it is a small part of the entire fauna of *Sitticus* in the Middle Asia. In witness of such statement five new species of the genus are being described below in this paper.

Sitticus inopinabilis Logunov, sp.n.

(Fig.6c,d)

MATERIAL. Holotype: 1♂ (ZMMU, Ta-4684), Kazakhstan, Baraldaitau Mt. Range, valley of Baraldaitau river, 16.04.1988, Ch.K.Tarabaev. Paratypes: 1♂ (ZMMU, Ta-4690),

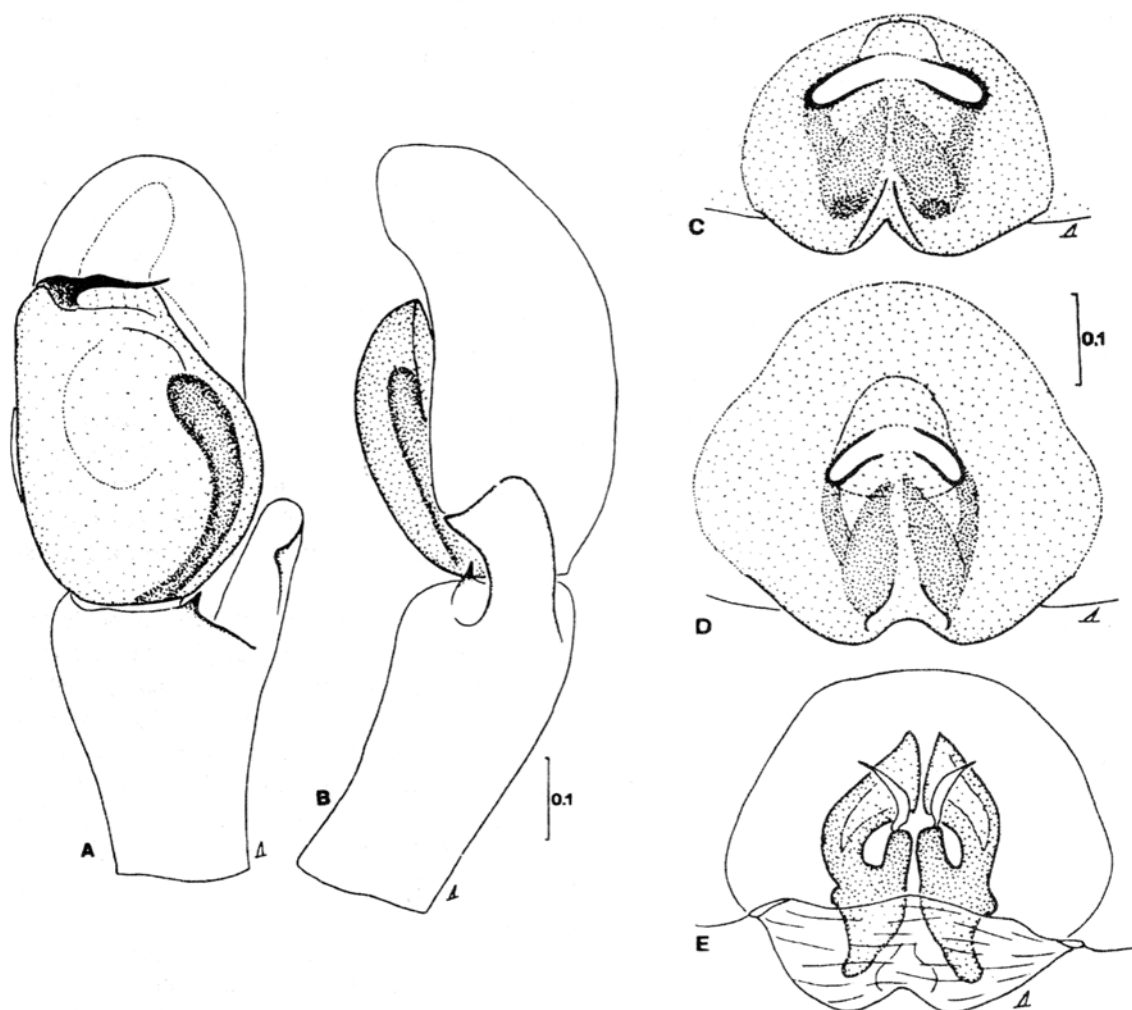


Fig.4. *Salticus tricinctus* (C.L.Koch,1846): a - male palp, ventral view; b - ditto, lateral view; c,d - epigyne; e - vulva. Scale in mm.

Рис.4. *Salticus tricinctus* (C.L.Koch,1846): а - палец самца, вентрально; б - то же, латерально; с, д - эпигина; е - вульва. Шкала в мм.

together with holotype; 2♂ (BI-1157), Alma-Ata Area, Chiliksky Distr., canyon of Charyn river, 29.05.1991, A.A.Zyuzin; 1♂ (ZMMU, Ta-4695), same area, Kapchagai Town, 16.09.1984, A.B.Nenilin.

DIAGNOSIS. *S.inopinabilis* belongs to the *saxicola* species group (sensu Proszynski, 1971). It is distinguished from other members of this group by more narrow tegulum, and the long and sharpened tibial apophysis (Fig.6c,d).

DESCRIPTION. MALE. Carapace 1.75 long, 1.25 wide, 0.85 high at PLE. Ocular area 0.78 long, 1.20 wide anteriorly and 1.20 wide posteriorly. AME diameter 0.35. Abdomen 1.45 long, 1.18 wide. Cheliceral length 0.40. Clypeal height 0.08. Length of leg segments: Leg I: 0.85 + 0.45 + 0.55 + 0.50 + 0.35; leg II: 0.80 + 0.45 + 0.48 + 0.43 + 0.33; leg III: 0.80 + 0.35 + 0.43

+ 0.43 + 0.38; leg IV: 1.40 + 0.50 + 0.93 + 0.60 + 0.40. Leg spination: Leg I: femur d.1-1-2; patella pr.0-1-0; tibia v.1-1-1; metatarsus v.2-2ap. Leg II: femur d.1-1-3; patella pr.0-1-0; tibia pr.0-1, v.1-1; metatarsus v.2-2ap. Leg III: femur d.1-1-3ap; patella pr. and rt.0-1-0; tibia d.1-0, pr.1-1, rt.1-; metatarsus d.3-2, pr. and rt.1-1ap. Leg IV: femur d. 1-1-2; patella pr. and rt.0-1-0; tibia d.0-1-0, pr. and rt.1-1-1; metatarsus d.2-2ap, rt.1-2ap. Colouration: Carapace dark-brown with sides and ocular area covered by thin white hairs. Eye field black. Sternum, labium, maxillae and chelicerae brown. Abdomen brown with thin yellow lines and triangular spot of white hairs in behind part of dorsum. Venter yellowish. Spinnerets brown. Palp brown with patella yellowish. All palp segments, especially patella, covered by

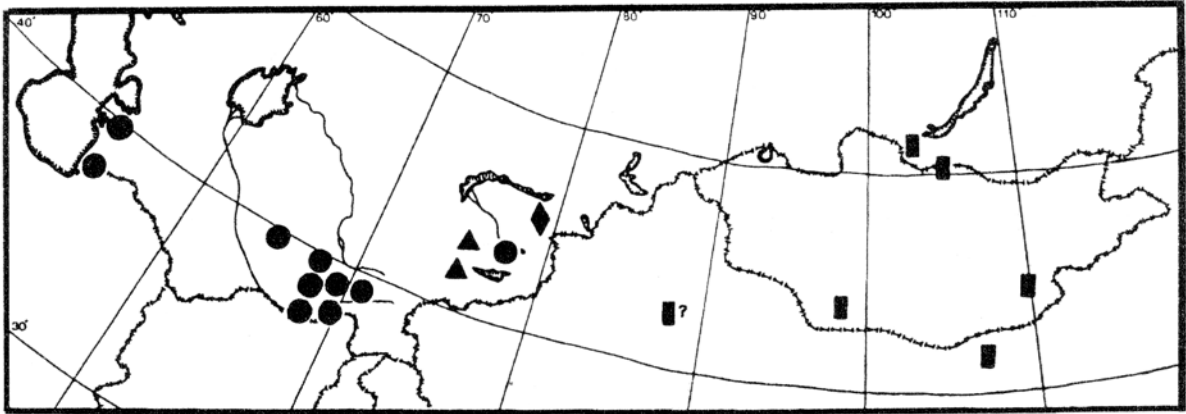


Fig.5. Distribution ranges of *Salticus tricinatus* (C.L.Koch) [circles], *S. proshynskii* sp.n. [triangles], *S. dzhungaricus* sp.n. [rhomb], and *S. latidentatus* Roewer [rectangles]. In addition to original records the data of Andreeva (1976), Kharitonov (1969), Nenilin (1984b), Schenkel (1963), Wesolowska (1981) are also used.

Рис.5. Распространение *Salticus tricinatus* (С.Л.Коч) [кружки], *S. proshynskii* sp.n. [треугольники], *S. dzhungaricus* sp.n. [ромбы], *S. latidentatus* Roewer [прямоугольники]. Помимо оригинальных, использованы данные Е.М.Андреевой (1976), Д.Е.Харитоновой (1969), Э.Шенкеля (Schenkel, 1963), В.Веселовской (Wesolowska, 1981).

thick white hairs. Legs brown with yellow spots, but metatarsi and tarsi with brown rings on the ends of segments. Palp structure shown in Fig.6c,d.

FEMALE unknown.

DISTRIBUTION. S.-Kazakhstan.

ETYMOLOGY. The name is derived from the Latin word "in-opinabilis", that means "unexpected, sudden".

Sitticus karakumensis Logunov, sp. n.
(Fig.7)

MATERIAL. Holotype: 1♂ (ZIP), Turkmenia, Repetek State Reserve, 10.03-28.04.1980, V.A.Krivokhatski. Paratypes: 3♂ 3♀ (ZMMU, Ta-4694), 4♂, 6♀ (ZIP), together with holotype; 2♂, 2♀ (BI-1160), same locality, 1.04.1981, V.A.Krivokhatski; 1m (ZIP), Badkhyz, Kizyl-Dzhar, 2-12.04.1978, V.A.Krivokhatski.

DIAGNOSIS. The species is very similar to the described below *S. kazakhstanicus* sp.n., but may be distinguished by the longer embolus, the shape of tibial apophysis (cf. Figs.7b and 8b) and a structure of vulva (Fig.7d).

COMMENTS. *S. karakumensis* sp. n. forms together with *S. kazakhstanicus* sp. n. (see below) a compact group of the species which live in true sand desert. They have bodies covered by thick white adpressed scales, like many *Yllenus* and *Aelurillus*, and any specimen

of them may be confused with those of the enumerated genera in general appearance. Some information on the ecology and habitat of *S. karakumensis* sp. n. was given by V.Krivokhatsky and V.Fet [1982], who had mentioned the species under the name *Sitticus* sp. This species is burrow-inhabiter occurred in holes of *Rhombomys opimus* Licht.

DESCRIPTION. MALE. Carapace 1.44-1.63 long, 1.07-1.20 wide, 0.79 high at PLE. Ocular area 0.64-0.77 long, 1.01-1.13 wide anteriorly and 0.94-1.10 wide posteriorly. Abdomen 1.24-1.50 long, 0.96-1.16 wide. Chelicerall length 0.50-0.57. Clypeal height 0.10-0.11. Length of leg segments: Leg I: 0.81-0.96 + 0.44-0.53 + 0.54-0.67 + 0.51-0.59 + 0.34-0.43; leg II: 0.73-0.84 + 0.39-0.40 + 0.41-0.51 + 0.44-0.50 + 0.33-0.40; leg III: 0.71-0.76 + 0.34-0.37 + 0.39-0.46 + 0.44-0.50 + 0.33-0.40; leg IV: 1.34-1.53 + 0.44-0.49 + 0.89-0.98 + 0.61-0.73 + 0.41-0.47. Leg spination: Leg I: femur d.0-1-1-3; patella pr.0-1-0; tibia pr.1-2, v.1-1-2ap; metatarsus v.2-2ap. Leg II: femur d.0-1-1-3; patella pr.1-1, v.1-1ap; metatarsus v.2-2ap. Leg III: femur d.0-1-1-3; patella pr. and rt.0-1-0; tibia d.1-0 or 0, pr.1-1-1 or 1-1, rt.1-0 or 1-1; metatarsus pr. and rt.1-2ap, v.2ap. Leg IV: femur d.1-1-3; patella pr. and rt.0-1-0; tibia d.1-0, pr. and rt.1-1-1, v.1ap; metatarsus pr. and rt.1-1-2ap. Colouration: Carapace light-brownish to dark-brown, covered by thick white

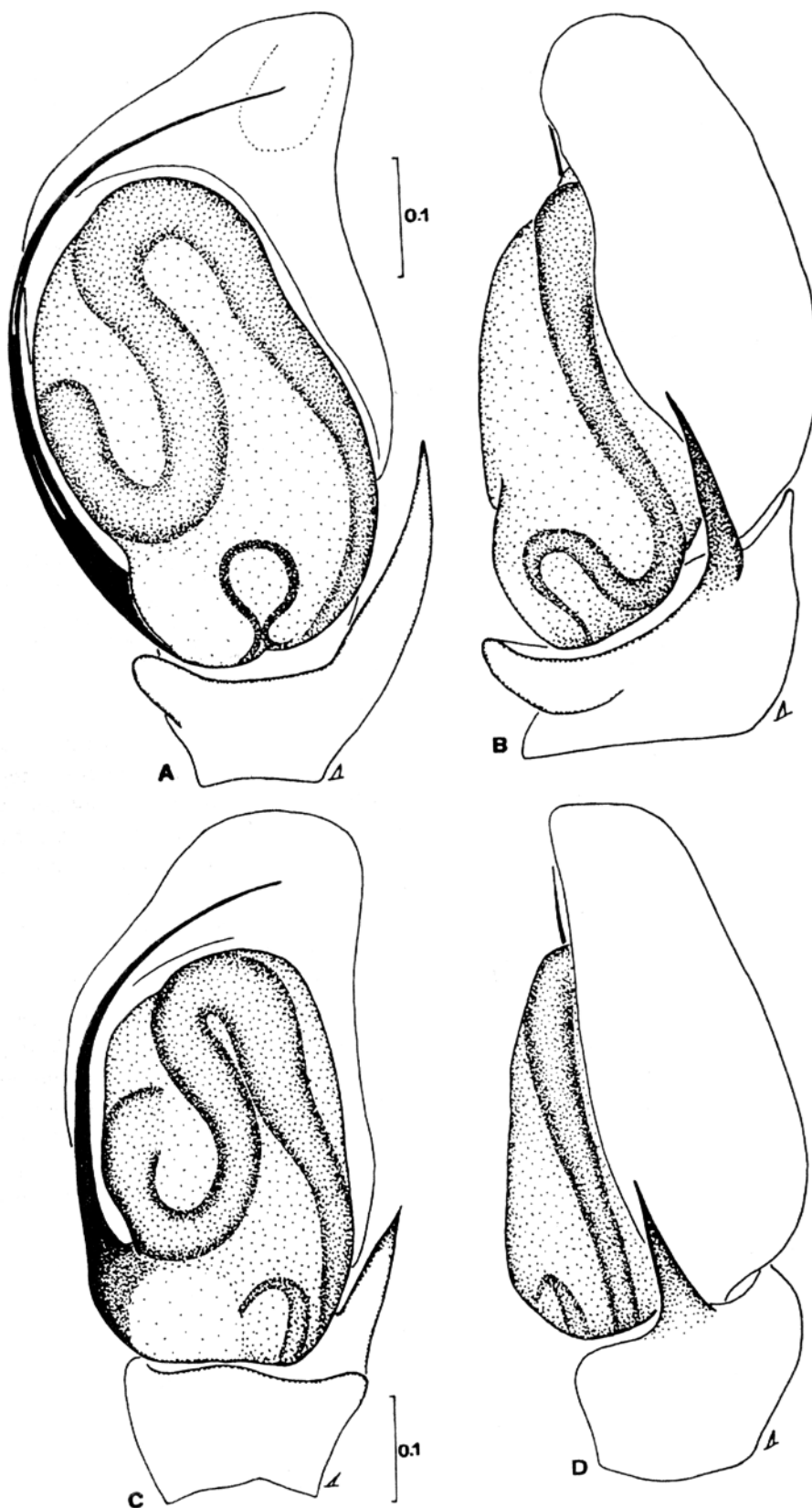


Fig. 6. *Sitticus pulchellus* sp.n. (a,b) and *S.inopinabilis* sp.n. (c,d): a,c - male palp, ventral view; b,d - ditto, lateral view. Scale in mm.

Рис.6. *Sitticus pulchellus* sp.n. (a,b) и *S.inopinabilis* sp.n. (c,d): a,c - палец саца, вентрально; b,d - то же, латерально. Шкала в мм.

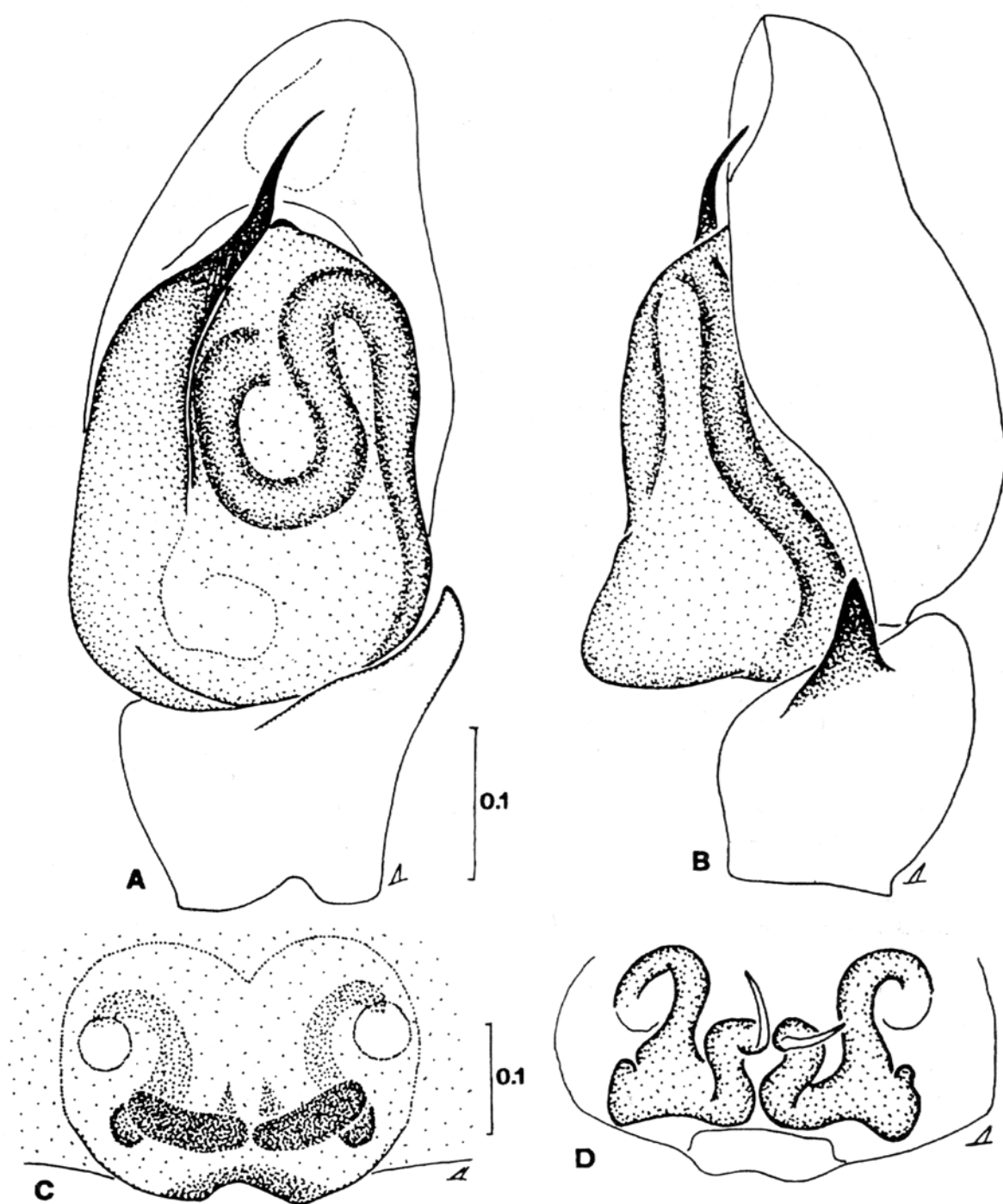


Fig.7. *Sitticus karakumensis* sp.n.: a - male palp, ventral view; b - ditto, lateral view; c - epigyne; d - vulva. Scale in mm.

Рис.7. *Sitticus karakumensis* sp.n.: а - пальпа самца, вентрально; б - то же, латерально; в - эпигина; д - вульва. Шкала в мм.

adpressed scales, like in some *Yllenus* spp. Black around eyes. Carapace bordered by dark-brown line. Clypeus yellow to brownish with long white hairs on front border. Sternum yellow-orange. Maxillae and labium yellow with darker margins. Chelicerae dorsally and lat-

erally yellow with grey film, ventrally yellow. Abdomen dorsally and laterally yellow with grey-brownish irregular spots, ventrally yellow. All abdomen covered by white hairs. Book-lung cover yellow-brownish. Spinnerets yellow. Legs yellow with brown rings except of legs I, of

which femora dark-brown on prolateral sides. Palpal segments yellow dorsally and dark-brown ventrally. Cymbium and tegulum brownish. Palp structure shown in Fig.7a,b.

FEMALE. Carapace 1.50-2.00 long, 1.23-1.51 wide, 0.81-0.94 high at PLE. Ocular area 0.90-0.99 long, 1.16-1.34 wide anteriorly and 1.16-1.35 wide posteriorly. AME diameter 0.36-0.40. Abdomen 1.64-2.23 long, 1.26-1.77 wide. Cheliceral length 0.50-0.64. Clypeal height 0.11. Length of leg segments: Leg I: 0.74-1.03 + 0.44-0.54 + 0.53-0.64 + 0.46-0.54 + 0.39-0.50; leg II: 0.76-0.96 + 0.37-0.53 + 0.47-0.57 + 0.40-0.56 + 0.44; leg III: 0.79-0.97 + 0.39-0.44 + 0.43-0.59 + 0.40-0.59 + 0.36-0.46; leg IV: 1.49-1.79 + 0.54-0.64 + 0.88-1.14 + 0.67-0.93 + 0.50-0.51. Leg spination: Leg I: femur d.0-1-1-2; patella 0-1-0; tibia pr.1-2, v.1-1-2ap; metatarsus v.2-2ap. Leg II: femur d.0-1-1-3; patella pr.0-1-0; tibia pr.1-1, v.1-1-1ap; metatarsus v.2-2ap. Leg III: femur d.0-1-1-3; patella pr. and rt.0-1-0; tibia d.1-0, pr. and rt.1-1-1, v.2ap; metatarsus pr.2-2ap, rt. 1-1-2ap, v.2ap. Leg IV: femur d.1-1-3; patella pr. and rt.0-1-0; tibia d.1-0, pr. and rt.1-1-1, 1ap; metatarsus pr. and rt.1-1-2ap. Colouration as described for male except those of palpi, which is yellow. Epigyne and vulva shown in Fig.7c,d.

DISTRIBUTION. Turkmenia, Eastern Karakum desert.

ETYMOLOGY. The name is derived from Karakum desert where the species occurs.

Sitticus kazakhstanicus Logunov, sp.n.
Fig.8.

MATERIAL. Holotype: 1♂ (ZMMU, Ta-4692), Kazakhstan, Taldy-Kurgan Area, Burlyutobinsky Distr., 38 km of road Tulebaev-Lepsey, 2.08.1988, A.A.Zyuzin. Paratypes: 2♂ (BI-1159), same area, Karatal Distr., Ushkol Lake, sands, 29.07.1988, Ch.K.Tarabaev; 1♀ (BI-1170), 1♀ (ZMMU, Ta-4693), Alma-Ata Area, 222-270 km of road Alma-Ata-Karaganda, 6-7.05.1988, M.V.Zarko; 1♀ (BI-1158), same area, Ugursky Distr., 15 km upper of Uzintai Vill., Karabaskum sands, 5.10.1989, A.A.Zyuzin.

DIAGNOSIS. The species is closely related to *S.karakumensis* sp.n. (see above), but may be easily separated by the shorter embolus, the thicker tibial apophysis (Fig.8b) and by a vul-

val structure (Fig.8e). See also "comments" under *S.karakumensis* sp.n.

DESCRIPTION. MALE. Carapace 1.53 long, 1.11 wide, 0.75 high at PLE. Ocular area 0.66 long, 1.05 wide anteriorly and 0.99 wide posteriorly. AME diameter 0.33. Abdomen 1.41 long, 1.02 wide. Cheliceral length 0.54. Clypeal height 0.09. Length of leg segments: Leg I: 0.92 + 0.48 + 0.66 + 0.54 + 0.42; leg II: 0.75 + 0.41 + 0.45 + 0.45 + 0.36; leg III: 0.78 + 0.32 + 0.47 + 0.42 + 0.33; leg IV: 1.32 + 0.45 + 0.95 + 0.66 + 0.42. Leg spination: Leg I: femur d.0-1-1-2; patella pr.0-1-0; tibia pr.1-1-1, v.1-2-2ap; metatarsus pr.1-0; v.2-2ap. Leg II: femur d.0-1-1-3; patella pr. and rt.0-1-0; tibia pr.1-1, v.1-1-2ap; metatarsus pr.1-1ap, v.2-2ap. Leg III: femur d.0-1-1-3; patella pr. and rt.0-1-0; tibia d.1-0, pr. and rt.1-1-1, v.2ap; metatarsus pr.2-2ap, rt.1-1-2ap. Leg IV: femur d.1-1-3; patella pr. and rt.0-1-0; tibia d.1-0, pr. and rt.1-1-1, v.1-0-1-2ap; metatarsus d.2-2-2ap, pr. and rt.1-0-2ap. Colouration: Carapace brownish, covered by thick white adpressed scales. Black around eyes. Anterior border of clypeus decorated with long white hairs. Sternum grey-yellow, covered by thick white hairs. Maxillae, labium and chelicerae of sandy colour. Abdomen yellowish with brownish markings of spots. Spinnerets yellow. Legs yellow, all femora and tibiae with pair brown rings on the ends of segments. Besides that, ventral and lateral sides of femora I brown. Palpi yellowish, their femora ventrally black, tegulum brown, cymbium brownish-yellow. Palp structure shown in Fig.8a,b.

FEMALE. Carapace 1.58 long, 1.23 wide, 0.75 high at PLE. Ocular area 0.69 long, 1.07 wide anteriorly and 1.07 wide posteriorly. AME diameter 0.33. Abdomen 2.10 long, 1.59 wide. Cheliceral length 0.48. Clypeal height 0.11. Length of leg segments: Leg I: 0.78 + 0.45 + 0.48 + 0.42 + 0.33; leg II: 0.72 + 0.33 + 0.42 + 0.39 + 0.27; leg III: 0.75 + 0.33 + 0.42+0.42 + 0.36; leg IV: 1.37 + 0.51 + 0.93 + 0.69 + 0.42. Leg spination: Leg I: femur d.0-1-1-2; patella pr.0-1-0; tibia pr.1-1, v.2-2-2ap; metatarsus v.2-2ap. Leg II: femur d.0-1-1-2; patella pr.0-1-0; tibia pr.0-1, v.1-1-1ap; metatarsus v.2-2ap. Leg III: femur d.0-1-1-2; patella pr. and rt.0-1-0; tibia d.1-0, pr. and rt.1-1-1; metatarsus pr.2-3ap, rt.1-1-2ap. Leg IV: femur d.1-1-3; patella pr. and rt.0-1-0; tibia d.1-0, pr. and rt.1-1-1, v.1-0; metatarsus pr. and rt.1-1-2ap. Colouration as described for male, but lighter.

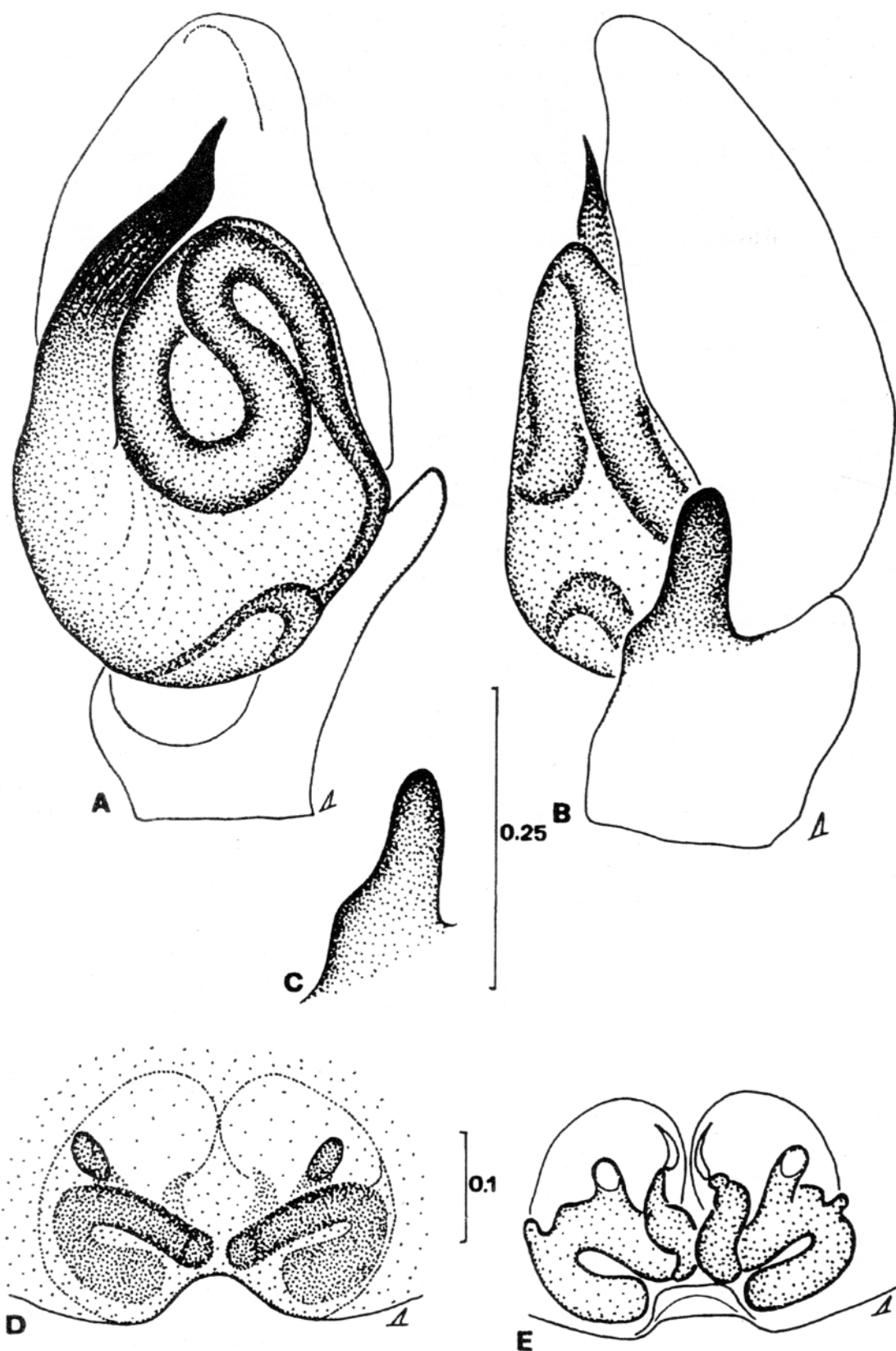


Fig.8. *Sitticus kazakhstanicus* sp.n.: a - palp of male, ventral view; b - ditto, lateral view; c - epigyne; d - vulva. Scale in mm.

Рис.8. *Sitticus kazakhstanicus* sp.n.: а - пальпа самца, вентрально; б - то же, латерально; с - эпигина; д - вульва. Шкала в мм.

Carapace also covered by thick white scales. Tarsi and metatarsi of palpi covered by thick long white hairs. Brown rings on legs are thinner than those of male. Epigyne and vulva shown in Fig.8d,e.

DISTRIBUTION. Only SE.-Kyzylkum desert.

ETYMOLOGY. The name of new species is derived from Kazakhstan, of which deserts it occurs.

Sitticus monstrabilis Logunov, sp.n.

Fig.9.

MATERIAL. Holotype: 1♂ (ZMMU Ta-4696), Kazakhstan, Alma-Ata Area, Talgar Distr., Alma-Atinsky State Reserve, Valley of Monashka River, 27.09.1984, Ch.K.Tarabaev. Paratypes: 1♂, 1♀ (BI-1173), 1♂ (ZMMU Ta-4697), same locality, 1700-1800m alt., 1.09.1983, Yu.M.Marusik; 1♂ (BI-1172), same locality, middle flow of Talgar River, 13.08.1986, A.V.Abramov.

DIAGNOSIS. The new species belongs to the *floricola* species group (sensu Proszynski, 1980) and is closely related to *S.magnus* Chamberlin et Ivie, 1944 and *S.cutleri* Proszynski, 1980. Male differs in the more curved spermal duct and the shape of embolar base (Fig.9a). Female has a characteristic structure of vulva (Fig.9e).

DESCRIPTION. MALE. Measurements of holotype: Carapace 2.48 long, 1.68 wide, 1.00 high at PLE. Ocular area 0.84 long, 1.32 wide anteriorly and 1.32 wide posteriorly. AME diameter 0.40. Abdomen 2.56 long, 1.84 wide. Cheliceral length 0.75. Clypeal height 0.12. Length of leg segments: Leg I: 1.64 + 1.06 + 1.16 + 0.88 + 0.56; leg II: 1.28 + 0.80 + 0.92 + 0.72 + 0.52; leg III: 1.12 + 0.56 + 0.64 + 0.64 + 0.48; leg IV: 1.60 + 0.72 + 1.04 + 0.96 + 0.56. Leg spination: Leg I: femur d.1-1-1; patella pr. and rt.0-1-0; metatarsus v.2-2. Leg II: femur d.1-1-2; patella pr.0-1-0; tibia pr.1-1, v.1-1-1; metatarsus v.2-2ap. Leg III: femur d.1-1-3; patella pr. and rt.0-1-0; tibia d.1-0, pr. and rt.1-1-1, v.1-2ap; metatarsus d.2-1-2ap, pr.1-1ap, rt.1ap, v.2ap. Leg IV: femur d.1-1-2ap; patella pr. and rt.0-1-0; tibia d.0-1-0, pr. and rt.1-1-1, v.1-0-2ap; metatarsus d.2-2-2ap, pr.1-0-1ap, rt.1ap, v.2ap. Colouration: Carapace dark-brown with three longitudinal lines of white hairs (Fig.9c). Sternum brown with lighter

anterior part. Labium, maxillae and chelicerae dark-brown. Dorsum of abdomen dark-brown with medial white lines (Fig.9c). Sides and venter of abdomen grey. Spinnerets brownish. Palp: femur and patella yellowish-brown, tibia, cymbium and tegulum dark-brown. Femora of legs I and II dark-brown dorsally and laterally, and yellowish ventrally. Remaining segments of the first pair legs and legs III, IV yellow-brown with brown spots. Palp structure shown in Fig.9a,b.

FEMALE. Carapace 2.33 long, 1.68 wide, 0.93 high at PLE. Ocular area 0.95 long, 1.30 wide anteriorly and 1.33 wide posteriorly. AME diameter 0.39. Abdomen 2.63 long, 2.00 wide. Cheliceral length 0.70. Clypeal height 0.10. Length of leg segments: Leg I: 1.08 + 0.68 + 0.70 + 0.58 + 0.45; leg II: 1.00 + 0.63 + 0.63 + 0.56 + 0.40; leg III: 1.00 + 0.50 + 0.53 + 0.58 + 0.43; leg IV: 1.60 + 0.68 + 1.08 + 0.95 + 0.53. Leg spination: Leg I: femur d.0-1-1-2; tibia v.2-2ap; metatarsus v.2-2ap. Leg II: femur d.0-1-1-2; tibia pr.0-1, v.1-1-2ap; metatarsus v.2-2ap. Leg III: femur d.1-1-2; patella pr. and rt.0-1-0; tibia pr.2-2ap, rt.1-1ap, v.2ap. Leg IV: femur d.1-1-1; patella pr. and rt.0-1-0; tibia pr. and rt.1-1-1, v.1-2ap; metatarsus pr.2-2ap, rt.1-1-2ap, v.2ap. Colouration of female as described for male except as follows: white stripes on carapace and abdomen are absent, abdomen motley, grey-brown with dark-brown and yellow spots. Structure of epigyne and vulva shown in Fig.9d,e.

DISTRIBUTION. Type locality only.

ETYMOLOGY. The species is named by the Latin word "monstrabilis", that means "remarkable, excellent".

Sitticus pulchellus Logunov, sp.n.

(Fig.6a,b)

MATERIAL. Holotype: 1♂ (ZMMU, Ta-4691), Kyrgyzstan, Fergansky Mt. Range, Alash, 5.01.1983, A.Urustamov.

DIAGNOSIS. New species belongs to the *saxicola* species group (sensu Proszynski, 1971). It is closely related to the above described *S.inopinabilis* sp.n., but may be easily distinguished from it and from other members of the *saxicola* group as well by the shape of tegulum and the tibial apophysis (Fig.6b).

DESCRIPTION. MALE. Carapace 1.46 long, 1.16 wide, 0.83 high at PLE. Ocular area

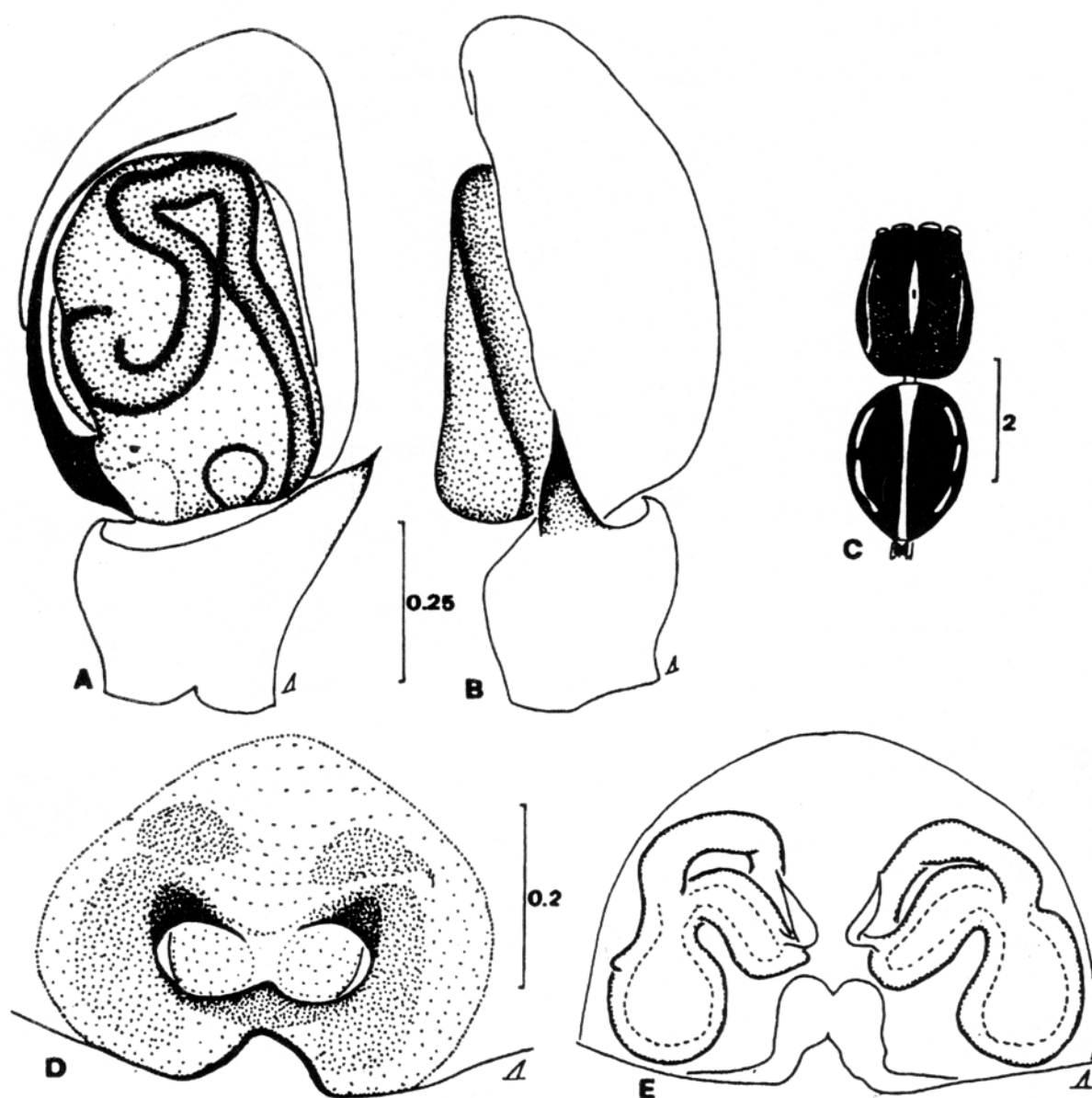


Fig.9. *Sitticus monstrabilis* sp.n.: a - male palp, ventral view; b - ditto, lateral view; c - male holotype, general appearance; d - epigyne; e - vulva. Scale in mm.

Рис.9. *Sitticus monstrabilis* sp.n.: а - палец самца, вентрально; б - то же, латерально; в - самец, голотип, общий вид; д - эпигина; е - вульва. Шкала в мм.

0.74 long, 1.07 wide anteriorly and 1.03 wide posteriorly. AME diameter 0.29. Abdomen 1.43 long, 1.07 wide. Cheliceral length 0.36. Clypeal height 0.10. Length of leg segments: Leg I: 0.81 + 0.43 + 0.56 + 0.49 + 0.39; leg II: 0.71 + 0.39 + 0.44 + 0.43 + 0.33; leg III: 0.74 + 0.36 + 0.43 + 0.43 + 0.36; leg IV: 1.30 + 0.47 + 0.83 + 0.63 + 0.46. Leg spination: Leg I: femur d.1-1-2; patella pr.0-1-0; tibia pr.0-2, v.1-1-1ap; metatarsus v.2-2ap. Leg II: femur d.1-1-3; patella pr.0-

1-0; tibia pr.0-1, v.1-2ap; metatarsus v.2-2ap. Leg III: femur d.1-1-3; patella pr. and rt.0-1-0; tibia d.1-0, pr. and rt.1-1; metatarsus d.1-0, pr. and rt.1-2ap, v.2ap. Leg IV: femur d.1-1-3; patella pr. and rt.0-1-0; tibia d.1-0, pr.1-1-1, v.1-0-1ap; metatarsus pr. and rt.1-1-2ap. Colouration: Carapace yellowish-brown with three longitudinal yellow stripes, covered by thick white hairs, including stripes back of PLE. Black around eyes. Clypeus yellow with ante-

rior margin decorated by long white hairs. Sternum and chelicerae yellow with brownish film. Labium brownish, maxillae yellow. Abdomen: dorsum brownish with medial longitudinal stripe of white hairs and yellow markings consisting of some curved V-shaped marks and spots; sides and venter yellowish-brown, and sides additionally covered by thick white hairs. Book-lung covers yellow with brown film. Spinnerets yellow. All legs yellow with brown bands. Palp structure shown in Fig.6a,b.

FEMALE unknown.

DISTRIBUTION. Type locality only.

ETYMOLOGY. The species name is derived from the Latin word "pulchellus", that means "pretty".

Notes on new faunistic records.

Distribution of Salticidae in the Middle Asia is still poorly known. Therefore some new faunistic records for rarely and little known species are given below. To one species, *Bianor stepposus* Logunov, 1991, some additional materials from Siberia are also provided.

1. *Bianor stepposus* Logunov, 1991.

MATERIAL. 1♂ (BI), Kazakhstan, Alma-Ata Area, Alma-Atinsky Reserve, 2000 m alt., 2.09.1983, Yu.M.Marusik; 1♂, 4♀ (BI), Chita Area, Kyra Distr., Sokhondo Reserve, valley of Agutsa river, slope steppes, 1100-1300 m alt., 14-16.06.1991, D.V.Logunov; 1♀ (BI), same area, 3-5 km E of Kyra Vill., 19.06.1991, D.V.Logunov.

New to the Middle Asia. It was described from Tuva [Logunov, 1991].

2. *Euophrys nigrita* (Thorell, 1875).

MATERIAL. 1♂, 1♀ (BI), Kazakhstan, Chimkent Area, Turkestan Distr., Karatau Mt.Range, valley of Bayaldy river, 11.06.1989, A.A.Zyuzin, Ch.K.Tarabaev.

This species has been earlier recorded by A.Nenilin [1984c, 1985] from Kyrgyzstan and Dzhambul Area of Kazakhstan.

3. *Heliophanus curvidens* (O.Pickard-Cambridge, 1872).

MATERIAL. Kazakhstan: 1♂, 1♀ (BI), Mangistauzskaya Area, Ustyurt Plateau, Ustyurtsky Reserve, 20.05.1989, A.A.Zyuzin, A.Raikhanov; 4♂ (BI), Taldy-Kurgan Area, Panfilovskiy

Distr., 65 km from Nizhniy Pidzhim, Moynunkum desert, 6.10.1989, A.A.Zyuzin; 1♀ (BI), same area, Balkhash Lake, 3.08.1988, Ch.K.Tarabaev; 5♀ (BI), Semipalatinsk Area, Kokpekty Vill., 7.08.1989, A.A.Zyuzin; 1♂ (BI), Alma-Ata Area, Iliysky Distr., Kurtinskoye reservoir, 4.05.1988, Ch.K.Tarabaev, M.V.Zarko; 1♀ (BI), same area, 222 km from the highway Alma-Ata - Karaganda, 6.05.1988, M.V.Zarko.

New to Kazakhstan. It was earlier found in China (Gansu), Pakistan (Caracorum), Palestina [Wesolwska, 1986] and also in Mongolia and Tadzhikistan [Proszynski, 1982].

4. *Heliophanus potanini* Schenkel, 1963

MATERIAL. Kazakhstan: 4♂, 1♀ (BI), Alma-Ata Area, Djambul Distr., Akterek Vill., 23.05-3.06.1988, I.Smigunova; 2♂, 1♀ (BI), same area, road to Narynkol, Kokpekskoye Canyon, 28-29.05.1988, Ch.K.Tarabaev; 2♂ (BI), Chimkent Area, Karatau Mt.Range, upper Kokbulak river, 22.04.1988, Ch.K.Tarabaev; 3♀ (BI), same area, Suzak Distr., Karatau Mt.Range, 2 km S of Aksumbe Vill., 16.06.1989, A.A.Zyuzin, Ch.K.Tarabaev; 2♀ (BI), same area, Turkestan Distr., Karatau Mt.Range, Turlan Pass, 24.06.1989, A.A.Zyuzin; 5♂, 4♀ (BI), Mangistauzskaya Area, Ustyurt Plateau, Ustyurtsky Reserve, 16-21.05.1989, A.A.Zyuzin, A.Raikhanov.

The species has middle-central Asiatic range. The main records have been made from Mongolia [Schenkel, 1963; Proszynski, 1982], China (Xinjiang) [Zhou, Song, 1988; Hu, Wu, 1989], and from South Kazakhstan and Uzbekistan [Nenilin, 1985]. So the Ustyurt Plateau is the westernmost locality, where *H.potanini* is found.

5. *Marpissa nivoyi* (Lucas, 1846)

MATERIAL. 1♂, 1♀ (BI), Kazakhstan, Mangistauzskaya Area, Ustyurt Plateau, Ustyurtsky Reserve, Onere spring, 16.05.1989, A.A.Zyuzin.

This is the second record from the Middle Asia. New for Kazakhstan. The species was firstly found in Kyrgyzstan [Nenilin, 1984c].

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References.

- Andreeva E.M. 1976 [Spiders of Tajikistan]. Dushanbe, Donish Publ. 195 pp. [in Russian].
- Hu J.L., Wu W.G. 1989 [Spiders from agricultural regions of Xinjiang, Uygur Autonomous Region, China (Arachnida, Aranei)]. Shandong Univ. Publ. House. 435 pp. [in Chinese].
- Kharitonov D.E. 1969 [Materials on the spider fauna of USSR] //Uchyonye zap. Permskogo Univ. No.179. P.59-133 [in Russian].
- Krivokhatsky V.A., Fet V.A. 1982. [The spider fauna (Aranei) of rodent burrows in eastern Karakum]// Problemy osvoyaeniya pustyn. No.4. P.68-75 [in Russian].
- Logunov D.V. 1991 [The spider family Salticidae (Aranei) from Tuva. I. Six new species of the genera *Sitticus*, *Bianor* and *Dendryphantus*]// Zool. Zhurn. Vol.70. No.6. P.50-60 [in Russian].
- Logunov D.V., Wesolowska W. (in press) Two new species of the genus *Sitticus* Simon, 1901 from the Middle Asia (Aranei, Salticidae) //Ent. bas., Basel.
- Nenilin A.B. 1984a. [Materials on the fauna of the spider family Salticidae of the USSR. I. Catalogue of Salticidae of the Middle Asia] // (Ed. by Utotchkin A. et al.) Fauna i ekologiya paukoobraznykh. Perm, Perm State Univ. Publ. P.6-37 [in Russian].
- Nenilin A.B. 1984b. [On the taxonomy of spiders of the family Salticidae of the fauna of the USSR and adjacent countries] //Zool. Zhurn. Vol.63. No 8. P.1175-1180 [in Russian].
- Nenilin A.B. 1984c. [Materials on the fauna of the spider family Salticidae of the USSR. III. Salticidae of Kirgizia] //Entomol. issled. v Kirgizii. Frunze, Ilim Publ. No 17. P.132-143 [in Russian].
- Nenilin A.B. 1985. [Materials on the fauna of the spider family Salticidae of the USSR. II. Results of the study in the USSR] // (Ed. Ovtcharenko V.I.) Fauna i ekologiya paukov SSSR. Trudy Zool.Inst.Leningrad. Vol.139. P.129-134 [in Russian].
- Ono H. 1988 A revisional study of the spider family Thomisidae (Arachnida, Araneae) of Japan. Tokyo, National Sci. Museum. 252 pp.
- Proszynski J. 1971. Revision of the spider genus *Sitticus* Simon, 1901 (Araneida, Salticidae) II. *Sitticus saxicola* (C.L.Koch, 1848) and related forms //Ann.zool.PAN. T.28. P.183-204.
- Proszynski J. 1980. Revision of the spider genus *Sitticus* Simon, 1901 (Aranei, Salticidae), IV. *Sitticus floricola* (C.L.Koch) group //Ibidem. T.36. P.1-35.
- Proszynski J. 1982. Salticidae (Araneae) of Mongolia //Ann. Hist.-nat. Mus. Nat. Hungarici. T.74. P.273-294.
- Proszynski J. 1984. Atlas rysunkow diagnostycznych mniejszych Salticidae. Siedlce, Zesz.Naukowe WSRP. 177pp.
- Proszynski J. 1990. Catalogue of Salticidae (Araneae). Synthesis of quotations in the world literature since 1940, with basic taxonomic data since 1758. Siedlce, WSRP. 366 pp.
- Schenkel E. 1963. Ostasiatische Spinnen aus dem Museum d'Histoire naturelle de Paris //Mem. Mus. nat. Hist. nat. Paris. Ser.A. Zool. T.25. Fasc.2. P.289-481.
- Wesolowska W. 1981. Salticidae (Aranei) from North Korea, China and Mongolia //Ann.zool.PAN. Vol.36. P.45-83.
- Wesolowska W. 1986. A revision of the genus *Heliophanus* C.L.Koch, 1833 (Aranei: Salticidae) //Ibidem. Vol.40. P.1-254.
- Zhou N., Song D.X. 1988. [Notes on some jumping spiders from Xinjiang, China] //J. of August 1st Agri. College. Vol.37. No 3. P.1-14 [in Chinese].